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## VI.—PROTECTING TURNIP CROPS FROM THE FLY.

*The GOLD CERES MEDAL was this Session presented to Mr. CHARLES POPPY, Jun. of Withesham, near Ipswich, for his method of SECURING TURNIP CROPS FROM INJURY BY THE FLY.*

IN December, 1825, a letter was received from Mr. Poppy in consequence of the premium offered by the Society to the inventor of an effectual method of protecting turnip crops from the fly. This letter occasioned a desire on the part of the committee to whom it was referred, for further particulars; and thus was begun a correspondence between Mr. Poppy and the Secretary, which continued for about a year and a half, and occasioned the interchange of numerous letters. It has not been thought necessary to print these at length, as it appeared that the object of the Society, the communication of useful information, would be better answered by disencumbering the useful facts of the repetitions and mutual explanations incident to a protracted correspondence.

The turnip fly is a small insect, which abounds, more or less, on the rank verdure of hedge-banks during the whole open time of the year, and spreads from thence on such agricultural crops as are grateful to it. Turnips are particularly exposed to its attacks while the young seedlings are yet very tender; but when they get into the rough leaf, they are, for the most part, secure from the attacks of this insect.

It is a general opinion, that the fly has been more prevalent, or at least more destructive, of late years, than it used to be, and this Mr. Poppy (admitting the fact)

attributes to the circumstance, that the turnips at present cultivated are finer in the tap root and in the herbage than they used to be, so that the seedlings continue longer in that state in which they form an agreeable food for the fly.

It is considered as a fact well ascertained, that when the turnip lands on a farm are sown in succession, with intervals of a few days between the sowing of each field, the crop suffers more than when the whole of the turnip lands are sown at once; the insects, in the former case, migrating from the field first sown to the next in succession, so that each field in turn is preyed upon by nearly the whole number of insects on the farm. On this account Mr. Sutton proposed that all the turnip lands of a district should be ploughed, rolled down, and then sowed on one and the same day, after the first shower of rain. This would, no doubt, be, to a certain degree, effectual, but is often impossible to carry into execution even upon a single farm, much more on an entire district.

It had been observed, that on those spots in a field where a greater quantity of seed than usual had been accidentally scattered, the plants, in consequence of being much crowded, drew each other up, like mustard sown for small sallading, and in consequence of this, were more tender and succulent than the rest of the crop. The patches were found to be particularly infested by the fly, which suggested to Mr. Paul, of Starston, in Norfolk, the idea of sowing a number of such patches, by way of decoy to the insects, and when collected in these places, they were to be destroyed by a heavy roller, or by scattering straw over them and burning them, or by any other means. The success attending this practice was very dubious, which induced Mr. J. Hayward, of Stoke-Ash, and Mr. Samuel Taylor, of Ditchingham, both of them friends of Mr. Poppy, to sow the whole land unusually

thick, in order that there might be plants enough to supply the insects, and also to stand for a crop. The success attending this practice was considerable, although it occasionally failed ; but the plants, in consequence of the thick sowing, having been drawn up too weak, their subsequent growth was retarded, and the value of the crop deteriorated, it being well known that a large full grown turnip is of more value as cattle food than two or three smaller ones of the same weight.

Mr. Poppy, while he has adopted the practice of thick sowing, in order to decoy the fly, has avoided the injury to the crop arising from the plants being drawn up too weak, by drilling the seed in rows at only half the usual distance, and sowing thick the alternate rows for a decoy, while the other rows are sown thin, being intended to stand for a crop. The fly appears to prefer the white turnip to the Swedish turnip, so that a crop of this latter may be got with certainty, as far as security from the fly is concerned, by sowing thickly the rows intended for a decoy with white turnips. For this latter purpose, the seed obtained from untransplanted roots will answer perfectly well. When the turnips intended for the crop are ready for the first hoeing, the rows intended for a decoy, to which the flies chiefly confine themselves, are to be turned in with the horse-hoe.

In corroboration of his theory, Mr. Poppy, in 1826, drilled four acres with a pint of Swedish turnip seed, for the crop, and with about a peck of the commonest white turnip seed, for a decoy. The plan fully answered his expectation, the flies, which were very numerous, feeding almost entirely on the thick sown rows, so that he obtained an excellent crop, while those of his neighbours, sown at the same time, and in the usual manner, totally failed.

He was also requested by a friend to undertake the

management of four acres of ground which, under the common management, had always failed to produce a crop. Mr. Poppy complied with the request, although, as the farm was managed by a bailiff, it was not a very agreeable business. Not a drop of rain fell after the sowing, but, nevertheless, an excellent crop was obtained.

The following certificate from five of Mr. Poppy's neighbours attests the accuracy of the statement, and some further interesting particulars are contained in the subjoined letter from J. Cobbold, Jun., Esq., of Ipswich, in reply to one addressed to him by the Secretary.

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## CERTIFICATES.

We the undersigned saw Mr. Poppy's turnips repeatedly, from their infant state till drawn off the land; they were much infested with the fly, but stood the attack without injury, whilst all others in the parish at that *early period* were destroyed.

JOHN COOPER, WITNESHAM.

BENJAMIN COOPER, WITNESHAM.

RICHARD FLOWERDEW.

HENRY GILES, CHELMONDISTON.

THOMAS FLORY.

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SIR,

Ipswich, February 10, 1827.

In reply to your letter of the 2nd instant, I saw Mr. Poppy's field of Swedish turnips last Summer, when nearly all the other turnips in this county were eaten by the fly, which insects were in great abundance on the surface of Mr. Poppy's field when I saw it, but they appeared to be principally drawn to feed upon alternate rows of common

turnips, which were black with the fly, and which were sown to decoy them from the Sweedish turnips, intended to stand for a crop (which were drilled in rows fifteen inches apart), and which by this mode I believe escaped destruction, as I have learned from him and his neighbours, that he had an excellent produce from his first sowing. Upon receipt of your favour, I rode over to examine the crop, but it was off the land, which was ploughed up.

I apprehended from their appearance, that the common turnips being sown *thick*, the plants were drawn up fast, and the leaf thereby became more tender and favourite food than those plants which stood thinner and more exposed to air; this appeared to me (independent of their liking common turnips best) a reason why the fly settled in such abundance on the *thick* rows of drilled common turnips.

From inquiries I have made of farmers in this neighbourhood, the plan is considered fully to answer the intended purpose, and I consider Mr. Poppy entitled to great credit, not only for the originality of the idea, but for his perseverance in adhering to it.

I am informed that sowing patches of common turnips very thick in various parts of a field sown with Sweedish ones, has proved an effectual mode of saving a crop this last Summer.

Any other information in my power I shall at all times be happy to render you.

I am, Sir,

*A. Aikin, Esq.*

&c. &c. &c.

*Secretary, &c. &c.*

JOHN COBBOLD, Jun.